

CLAIMS

1.           An apparatus for transferring and applying a film of coating solution on each of two applicator rolls to each side of a web as it passes between nipping portions of said two applicator rolls which are formed when they are pressed against each other, said apparatus comprising:  
                    an air-flotation type mini turn bar, provided to the downstream side of said nipping portions, for conveying said web while holding said web on a surface of one of said two applicator rolls, after said web passes between said nipping portions.
2.           The apparatus as set forth in claim 1, further comprising:  
                    a mechanism for moving said mini turn bar.
3.           The apparatus as set forth in claim 2, wherein said mini-turn-bar moving mechanism is constructed to adjust a distance that said web is held on said one applicator roll.
4.           The apparatus as set forth in claim 2 or 3, wherein said mini-turn-bar moving mechanism is constructed to adjust a distance between said one applicator roll and said mini turn bar.

5.           The apparatus as set forth in any one of claims  
1 through 3, further comprising:

5           a paper roll, provided to the upstream side of  
said nipping portions, for conveying said web while holding  
said web on a surface of the other of said two applicator  
rolls, before said web passes between said nipping  
portions.

6.           The apparatus as set forth in claim 5, further  
10 comprising:

          a mechanism for moving said paper roll.

7.           An air-flotation type mini turn bar for causing  
a web to travel so as to form an arcuately curved portion  
15 around said bar by floating said web with air, comprising:

          a first air pocket arranged inside the arcuately  
curved portion of said web;

          a second air pocket provided adjacent to said  
first air pocket and arranged near an entrance portion  
20 of said curved portion;

          a third air pocket provided adjacent to said  
first air pocket and arranged near an exit portion of said  
curved portion;

          a first air nozzle provided between said first  
25 air pocket and said second air pocket for squirting air  
toward said web; and

          a second air nozzle provided between said first

air pocket and said third air pocket for squirting air toward said web.

8. The air-flotation type mini turn bar as set forth  
5 in claim 7, further comprising:

a third air nozzle for squirting higher-pressure air than atmospheric pressure into said first air pocket.

9. The air-flotation type mini turn bar as set forth  
10 in claim 7, further comprising:

a plurality of first baffle walls provided in the direction of the width of said web within said first air pocket so that said first air pocket is segmented into a plurality of sections.

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10. The air-flotation type mini turn bar as set forth in claim 9, further comprising:

a plurality of second baffle walls provided in the direction of the width of said web within said second  
20 air pocket so that said second air pocket is segmented into a plurality of sections; and

a plurality of third baffle walls provided in the direction of the width of said web within said third air pocket so that said third air pocket is segmented into  
25 a plurality of sections.

11. The air-flotation type mini turn bar as set forth

in claim 7, wherein:

5       said second air nozzle comprises a second  
air-jet surface and a second slit-shaped air-jet groove,  
provided on a third surface extending in the direction  
of the width of said web;

      said second air-jet surface has a great number  
of air-jet bores and is provided near said first air pocket;  
and

10       said second air-jet groove extends in the  
direction of the width of said web and is provided near  
said third air pocket.

12.       The air-flotation type mini turn bar as set forth  
in claim 11, wherein:

15       said first air nozzle comprises a first air-jet  
surface and a first slit-shaped air-jet groove, provided  
on said third surface extending in the direction of the  
width of said web;

20       said first air-jet surface has a great number  
of air-jet bores and is provided near said first air pocket;  
and

      said first air-jet groove extends in the  
direction of the width of said web and is provided near  
said second air pocket.

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13.       The air-flotation type mini turn bar as set forth  
in any one of claims 7 through 12, wherein a shape from

said second air pocket to said third air pocket is formed symmetrically with respect to a center line of said first air pocket.

5        14.        An apparatus for transferring and applying a film of coating solution on each of two applicator rolls to each side of a web as it passes between nipping portions of said two applicator rolls which are formed when they are pressed against each other, said apparatus comprising:  
10                the air-flotation type mini turn bar as set forth in any one of claims 7 through 13, provided to the downstream side of said nipping portions for conveying said web while holding said web on a surface of one of said two applicator rolls after said web passes between said nipping portions,  
15        by air squirted from said bar.

15.        A method of transferring and applying a film of coating solution for coated paper production on each of two applicator rolls to each side of a web as it passes  
20        between nipping portions of said two applicator rolls which are formed when they are pressed against each other, said method comprising the step of:  
              conveying said web while holding said web on a surface of one of said two applicator rolls after said  
25        web passes between said nipping portions, by an air-flotation type mini turn bar.